

## CLAIMS

1. A storage system comprising:  
a pressurized reservoir system having a first inlet fluidly connected to a point of  
5 entry and a second inlet fluidly connected to an electrochemical device;  
at least one conductivity sensor in the pressurized reservoir system; and  
a distribution system fluidly connected to the pressurized reservoir system and to a  
point of use.
- 10 2. The storage system of claim 1, wherein the pressurized reservoir system has at least  
one baffle plate positioned proximate the first inlet.
3. The storage system of claim 2, wherein the pressurized reservoir system has at least  
one baffle plate positioned proximate the second inlet.
- 15 4. The storage system of claim 3 further comprising a controller regulating at least one  
operating parameter of the electrochemical device.
5. The storage system of claim 4, wherein the controller regulates at least one operating  
20 parameter of the electrochemical device based on a signal from the conductivity sensor.
6. The storage system of claim 5 further comprising a pretreatment device fluidly  
connected upstream of the electrochemical device.
- 25 7. The storage system of claim 6 wherein at least three conductivity sensors are in the  
pressurized reservoir system.
8. The storage system of claim 7 wherein the distribution system is a household water  
distribution system.
- 30 9. The storage system of claim 1 further comprising at least one sensor selected from  
the group consisting of a nephelometer, a composition analyzer, a pH, temperature and  
pressure sensor.

10. The storage system of claim 1, comprising at least three conductivity sensors installed along a water flow direction.

5 11. The storage system of claim 1 further comprising a post-treatment system comprising at least one of a ultraviolet device, a microfiltration device and an ultrafiltration device disposed downstream of the electrochemical device and upstream of the point of use.

10 12. The storage system of claim 1 further comprising a disinfectant source fluidly connected to at least one of the pressurized reservoir system, the electrochemical device, and the distribution system.

13. A water treatment system comprising:  
a reservoir system fluidly connected to a point of entry and having a first baffle  
15 plate;  
a water treatment device fluidly connected to the reservoir system; and  
a water distribution system fluidly connected to the reservoir system and a point of use.

20 14. The system of claim 13 wherein the reservoir system is pressurized.

15. The system of claim 14 further comprising a set of water property sensors for measuring at least one water property.

25 16. The system of claim 15 further comprising a controller for adjusting an operating parameter of the water treatment device based on the measured water property.

17. The water storage system of claim 14 further comprising a vent in the pressurized reservoir system.

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18. The water storage system of claim 14 further comprising an aeration system in the pressurized reservoir system.

19. The water storage system of claim 14 further comprising a post treatment device fluidly connected to the water distribution system and upstream of the point of use.
20. The water storage system of claim 14 further comprising a disinfectant source fluidly connectable to at least one of the reservoir system and the water treatment device.
21. A method for providing treated water comprising:  
storing water from a point of entry;  
removing at least a portion of any undesired species from the water in an electrochemical device to produce treated water;  
measuring at least one water property of the treated water; and  
transferring at least a portion of the treated water to a point of use according to the measured property.
22. The method of claim 21 further comprising storing the treated water.
23. The method of claim 22 wherein storing the treated water comprises storing the treated water under a pressure that is above atmospheric pressure.
24. The method of claim 21 further comprising storing the treated water with the water from the point of entry.
25. The method of claim 24 wherein storing the treated water is performed while minimizing any mixing with the water from the point of entry.
26. The method of claim 21 further comprising calculating a desired property of the treated water based on at least one measured water property.
27. The method of claim 26 further comprising adjusting an operating parameter of the electrochemical device based upon the calculated desired property.
28. The method of claim 27 wherein the measured water property is LSI.

29. The method of claim 27 wherein the operating parameter is a cycle time of the electrochemical device.

30. The method of claim 21 further comprising disinfecting at least a portion of the electrochemical device.

31. The method of claim 21 further comprising post treating the water prior to transferring to a point of use.

32. An electrodeionization system comprising:  
a reservoir system fluidly connected to a point of entry and having a water property sensor;  
an electrodeionization device fluidly connected to the reservoir system; and  
a controller connected to the water property sensor for regulating a water flow from the reservoir system to a point of use.

33. The electrodeionization system of claim 32 further comprising a household water distribution system fluidly connected to the reservoir system.

34. The electrodeionization system of claim 33 wherein the reservoir system has at least one baffle plate.

35. The electrodeionization system of claim 32 wherein the reservoir system is a pressurized reservoir system.

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36. A method for providing treated water comprising:  
storing water from a point of entry under a pressure that is above atmospheric pressure;  
removing at least a portion of any undesired species from the water in a water treatment device to produce treated water;  
measuring a property of the treated water;  
determining a difference between the property of the treated water to a set point; and

controlling an operating parameter of the water treatment device based on the difference between the property of the treated water and the set point.

37. The method of claim 36 further comprising pre-treating the water prior to removing  
5 any undesired species.

38. The method of claim 36 further comprising controlling a flow to a point of use based on the difference between the property of the treated water and the set point.

10 39. The method of claim 36 further comprising minimizing any mixing of the water from the point of entry with the treated water.

40. The method of claim 36 further comprising mixing the water from the point of entry with the treated water.

15 41. The method of claim 30 wherein the water treatment device comprises an electrodeionization device.

42. A method for facilitating water treatment comprising providing a water treatment  
20 system comprising an electrochemical device that is fluidly connected to a reservoir system having a water property sensor and a controller that is connected to the water property sensor for regulating a water flow from the reservoir system to a point of use, the treatment system is fluidly connectable to a point of entry and to the point of use.

25 43. A method for facilitating water treatment comprising providing a water treatment system comprising a reservoir system having a baffle plate and an electrodeionization device, the reservoir system is fluidly connectable to a point of entry and to a water distribution system.

30 44. A water treatment system comprising:  
means for storing water that is fluidly connected to a point of entry and an electrochemical device;  
means for determining a water property in the means for storing water; and

means for delivering water to a point of use based on the water property.

45. The water treatment system of claim 44 further comprising means for pretreating the water from a water source.

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46. The water treatment system of claim 44 further comprising means for adjusting an operating parameter of the electrochemical device based on the water property.

47. The water treatment system of claim 44 further comprising means for minimizing mixing in the means for storing water.

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48. A method for providing treated water comprising:  
storing water from a point of entry;  
removing at least a portion of any undesirable species from the water to produce  
treated water;  
storing at least a portion of the treated water; and  
minimizing any mixing of the water from the point of entry and the treated water.

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49. The method of claim 48 further comprising minimizing any mixing of the treated water while storing the treated water.

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50. The method of claim 49 wherein storing the at least a portion of the treated water comprises storing at least a portion of the treated water in a reservoir system.

51. The method of claim 48 wherein removing at least a portion of any undesirable species comprises purifying the water in an electrodeionization device.

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52. The method of claim 48 wherein storing water from the point of entry comprises storing water at a pressure that is above atmospheric pressure.

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53. The method of claim 48 wherein storing at least a portion of the treated water comprises storing at least a portion of the treated water at a pressure that is above atmospheric pressure.

54. The method of claim 48 further comprising measuring at least one water property.

55. The method of claim 48 wherein storing water from a point of entry comprises  
5 storing water in a first vessel of a reservoir system and storing at least a portion of the  
treated water comprises storing at least a portion of the treated water in a second vessel of  
the reservoir system.

56. A method for providing treated water comprising:  
10 storing water from a point of entry in a first zone of a reservoir system;  
removing at least a portion of any undesirable species from the water to produce  
treated water; and  
storing at least a portion of the treated water in a second zone of the reservoir  
system.

57. The method of claim 56 further comprising adjusting at least one of a first zone  
15 volume and a second zone volume based on a water demand by a point of use.

58. The method of claim 56 further comprising adjusting at least one of a first zone  
20 volume and a second zone volume based on a treated water property.

59. The method of claim 56 further comprising delivering water from any of the first and  
second zones to a point of use.

25 60. The method of claim 56 wherein the reservoir system is pressurized.

61. The method of claim 56 wherein the first zone comprises a first vessel of the  
reservoir system and the second zone comprises a second vessel of the reservoir system.

30 62. A method for purifying water comprising:  
storing water from a point of use;  
releasing any volatilizable material from the stored water;

removing at least a portion of any undesirable species from the water in a water treatment device to produce treated water; and  
storing at least a portion of the treated water.

5 63. The method of claim 62 wherein the water treatment device comprises an electrochemical device.

64. The method of claim 63 wherein the electrochemical device comprises an electrodeionization device.

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65. A method for purifying water comprising:  
storing water from a point of use;  
aerating the stored water;  
removing at least a portion of any undesirable species from the water in an  
15 electrodeionization device to produce treated water; and  
storing at least a portion of the treated water.

66. The method of claim 65 wherein storing the at least a portion of the treated water comprises storing the treated water at a pressure that is above atmospheric pressure.

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67. A water treatment system comprising  
a reservoir system fluidly connected to a point of entry and comprising a ventilation system; and  
an electrodeionization device fluidly connected to the reservoir system; and  
25 a point of use fluidly connected to the reservoir system.

68. A water treatment system comprising:  
a reservoir system fluidly connected to a point of entry and comprising an aeration system;  
30 a water treatment device fluidly connected to the reservoir system; and  
a point of use fluidly connected to the reservoir system.



69. The water treatment system of claim 68 further comprising at least one water property sensor.

5 70. The water treatment system of claim 68 further comprising a controller for regulating at least one operating parameter of the water treatment system based on a measured water property.

71. The water treatment system of claim 68 wherein the water treatment device comprises an electrochemical device.

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72. The water treatment system of claim 71 wherein the electrochemical device comprises an electrodeionization device.